URN etd-0407109-183721-1746
Author Shie-Feng Tsai
Author's Email Address No Public.
Statistics This thesis had been viewed 59 times. Download 41 times.
Department
Year 2003
Semester 2
Degree Master
Type of Document Master's Thesis
Language zh-TW.Big5 Chinese
Title On arbitrary binary trees of hypercubes
Date of Defense 0000-00-00
Page Count 26

Keyword
binary tree
diameter
dilation
embedding
Gray code
hypercube
preorder traversal
recursiveness
symmetry

Abstract
The problems of embedding trees into hypercubes have attracted considerable attention in the literature for the past 20 years. Especially, many researches were devoted to the problem of embedding binary trees into hypercubes. Hypercubes are very important interconnection networks because they own many good topological properties such as recursiveness, symmetry, small diameter, and fault-tolerant capability. Besides, hypercubes have been implemented as commercial computers. On the other hand, binary trees are the one of the most important topologies since many efficient algorithms can be executed on them. Embedding binary trees into hypercubes will make these efficient algorithms of trees easily transfer to commercial hypercube-computers. In this paper, we improve Chen and Stallmann's previous work and propose a new recursive algorithm to embed arbitrary binary trees into hypercubes. In general cases, the dilation of our embedding algorithm will be smaller than or equal to the dilation of Chen and Stallmann.
Keyword：binary tree, diameter, dilation, embedding, Gray code, hypercube, preorder traversal, recursiveness, symmetry
Advisory Committee Hui-Ling Huang - advisor

Files etd-0407109-183721-1746-001.pdf

indicate access worldwide
Date of Submission 2004-07-06